

WHAT IS CLAIMED IS:

1. A motor drive unit comprising:
  - an electrical motor;
  - an input shaft, which is coupled with a motor shaft of said electrical motor;
  - a housing, which covers and retains at least said electrical motor;
  - a first bearing member, which is mounted in said housing to support rotatably an end of said motor shaft on a side opposite to the coupled portion of said motor shaft; and
  - an elastic member, which is provided at the coupled portion and sandwiched between said motor shaft and said input shaft, such that said elastic member generates reaction forces in opposite axial directions to push said motor shaft and said input shaft away from each other;wherein:
  - the reaction forces of said elastic member act on said motor shaft to push said first bearing member axially, thereby pushing said housing.
2. The motor drive unit as set forth in claim 1, further comprising:
  - an output shaft, which is disposed in parallel with said input shaft; and
  - at least a couple of helical gears, which enable power transmission from said input shaft to said output shaft;wherein:

while said electrical motor is in operation, and the rotation of said motor shaft is transmitted from said input shaft through said helical gears to said output shaft, an axial thrust acting from said helical gears on said input shaft pushes said first bearing member to said housing via said motor shaft.

3. The motor drive unit as set forth in claim 2, further comprising a second bearing member, which is mounted in said housing to support rotatably said coupled portion of said motor shaft; wherein:

while said electrical motor is in operation, and the rotation of said motor shaft is transmitted from said input shaft through said helical gears to said output shaft, an axial thrust acting from said helical gears on said input shaft pushes said second bearing member to said housing.

4. The motor drive unit as set forth in claim 3, wherein: said motor shaft and said input shaft are connected coaxially by fitting male splines provided at the coupled portion of said input shaft into female splines provided at the coupled portion of said motor shaft;

said second bearing member supports rotatably said motor shaft at the coupled portion thereof with respect to said housing;

a collar portion provided at the coupled portion of said input shaft is in contact with a side face of said second bearing member; and

an axial thrust acting on said input shaft from said helical gears pushes said second bearing member to said housing.

5. The motor drive unit as set forth in claim 1, wherein:

said first bearing member is a floating bearing, which retains said motor shaft rotatably and supports said motor shaft in floating manner with respect to said housing.

6. The motor drive unit as set forth in claim 5, wherein said floating bearing comprises:

a tubular outer shell;

an inner hub, which is provided with a plurality of intro portions and with a central through-hole, and which is fit loosely in said outer shell;

a bearing, which is mounted in said inner hub, fitting in said through-hole; and

a damper material, with which axial and radial openings provided between said outer shell and said inner hub are filled.

7. A motor drive unit comprising:

an electrical motor;

an input shaft, which is coupled with a motor shaft of said electrical motor;

an output shaft, which is disposed in parallel with said input shaft;

a housing, which covers and retains at least said electrical

motor;

at least a couple of helical gears, which enable power transmission from said input shaft to said output shaft; and

a coupled side bearing, which supports rotatably, with respect to said housing, a coupled portion where an output end of said motor shaft and an input end of said input shaft are connected coaxially;

wherein:

while said electrical motor is in operation, and the rotation of said motor shaft is transmitted from said input shaft through said helical gears to said output shaft, a thrust is generated in the direction of said input shaft toward said motor housing;

said input shaft is provided with an action portion that makes said thrust act on an inner ring of said coupled side bearing; and

said thrust acting on said inner ring pushes said coupled side bearing to said motor housing.

8. The motor drive unit as set forth in claim 7, further comprising an opposite side bearing, which supports rotatably the end of said input shaft located opposite to said coupled portion thereof, wherein:

one of said helical gears mounted on said input shaft is positioned near said opposite side bearing;

said thrust is received by said coupled side bearing; and  
said thrust does not act on said opposite side bearing.